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Application No. 10/628,556
Amendment dated October 5, 2005
Reply to Office Action of April 6, 2005

Amendments To The Drawings:

The attached sheets of drawings include changes to Figures 5, 6, 7 and 8 with respect to the drawings submitted January 15, 2004.

Attachment: Appendix A - Replacement Sheets (4) & Annotated Sheets (4)

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- REMARKS/ARGUMENTS -

Claims 1 to 16 remain in the application.

Reconsideration of this application is respectfully requested.

Drawings

The Examiner has objected to the drawings of Figures 5, 6, 7 and 8 submitted on November 4, 2004 because they were not labelled as "Replacement Sheet", and has further identified reference character "85" as being used to designate both the probe boss (paragraph [0040]) and the annular inner wall (paragraph [0042]).

Therefore, Applicant resubmits the drawings of Figures 5, 6, 7, and 8 which are now labelled in the top margin as "Replacement Sheet" pursuant to 37 CFR 1.121(d). The replaced drawings of Figures 5, 6, 7 and 8 have been amended to more clearly indicate details of the figures which were included in the originally filed informal drawings but were inadvertently omitted from the formal drawings submitted on January 15, 2004. It should be noted that the annotated sheets of Figures 5, 6, 7 and 8 submitted herewith, show the changes with respect to the formal drawings submitted on January 15, 2004.

The defect of double use of the reference character "85" has been corrected in the replacement sheet of Figure 7 by changing reference character "85" (indicating the probe boss) to reference character "85A".

SPECIFICATION

Paragraph [0040] of the specification has been amended to correct the defect of double use of reference character "85", in accordance with the correction made to Figure 7.

General Comments On Prior Art

It is well known to people skilled in the art that engine casings for turbofan engines are conventionally constructed in multiple pieces and are assembled together during the entire engine assembly process. This is not only because different mechanical and thermal properties of the individual casing sections are preferred (which has been discussed in the

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background of the invention of this application), but also because multiple-piece casings provide access and convenience for assembling numerous engine parts inside the engine casing which is a challenging task due to the complexity of the engine configuration.

It is also well known that patent drawings are not engineering drawings, and are only required to show or illustrate the structural features relating to the subject invention. The environment of the invention or conventional parts not directly relating to the subject invention are not required to be illustrated with accuracy, and in fact are usually schematically illustrated to show their relationship with the subject invention.

Therefore, people skilled in the art will not make the judgment that a schematically illustrated engine casing in a patent drawing is intended to have an integrated configuration if the specification of the patent does not specifically and explicitly describe that feature.

The Examiner's rejections of the claimed invention are substantially based on the integrity of engine casings "appearing" to be such in the schematic illustrations in the drawings of the cited patent references, and thus there are no grounds to support the Examiner's rejections.

Claim Rejections 35 USC § 102

The Examiner has rejected claims 1, 2, 12, 13 and 15 under 35 U.S.C. 102(a) or (e) as being anticipated by Springer (US 6,532,731).

Applicant believes that the Examiner has misinterpreted US 6,532,731 upon reviewing the patent drawings. Springer's fan assembly 66, compressor assembly 46, combustor assembly 47 and turbine assembly 48 are encased by nacelle 52 and not by shell 44 of the annular drive engine 42 (see Figures 2 and 4), as alleged by the Examiner. From Springer drawings, the nacelle 52 "appears" to be an integral one-piece casing. However, it is respectfully submitted that if that was the case, the annular combustor 47 could not possibly be placed into the nacelle 52 through either end thereof because the annular combustor 49 has an outer diameter greater than inlet 70 and outlet 72 of the nacelle 52. Therefore, Springer's nacelle has to be segmented. Furthermore, it is respectfully submitted that Springer does not mention or even imply the integrity of the nacelle 52 in his description.

Springer is also silent as to the integrity of the rotating core engine 42 and as set forth hereinabove, the core casing 42 (or the annular shell 44) envelopes only a portion of the fan

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assembly 66. The core casing 42 does not envelope the compressor and turbine assemblies 46, 48. The compressor and turbine assemblies 46 and 48 are rather provided at the outer periphery of the annular shell 44.

Thus, Springer does not teach or suggest the claimed invention defined in claim 1 and claim 12, and therefore, the Examiner's rejections of claims 1 and 12 are traversed.

Claims 2, 13 and 15 depend directly or indirectly from either claim 1 or claim 12 and stand together with the base claims (claims 1 and 12) for patentability.

Claim Rejections – 35 USC § 103

The Examiner has rejected claims 1, 2, 5, 7, 8, 12, 13 and 15 under 35 U.S.C. 103(a) on the grounds of obviousness over Stuart (US 4,790,133) in view of either Davis et al. (US 3,720,060) or Springer (US 6,532,731).

As recognized by the examiner himself, it is not clear whether Stuart's strut 50 is welded or otherwise rigidly fixed to both the fan case 54 and the annular casing 14 to make an integrated single piece. Therefore, one cannot pretend that Stuart teaches integrating the fan duct 54 and the engine casing 14 into a single unit. Applicant would also like to draw the Examiner's attention to the fact that Stuart's Fig. 1 is only a schematic illustration of a turbofan engine and as such one cannot fairly extrapolate any structural details of the annular casing 14 and conclude that is an integrated single piece. Stuart does not mention or even imply the integrity of the casing 14 in the description and therefore the Examiner's allegation seems to be purely based on the schematic illustration of Stuart's turbofan engine.

Davis et al. (US 3,720,060) teaches a fan assembly including a fan casing (bypass duct 13) which is supported by the inner hub 20 or 41 through a ring of stator blades 14. Davis et al. do not mention the integrity of the fan casing 13, the stator blades 14 and the inner hub 20 or 41, but explicitly teach that the non-rotative main body 10 of the assembly A (including the fan casing assembly) bolts up to the front of the engine casing 26 immediately ahead of the engine compressor inlet 27 (column 3, line 33-36). Even in the embodiments illustrated in Figures 3 or 4, the inner hub 41 houses reduction gear 37 with co-axial input and output members 38 and 39, but does not house the compressors of the engine.

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Udall et al. (US 5,409,184) which the Examiner has also discussed do not teach an integral engine casing, but rather, a polygonal rigid frame 33 which is a mounting for coupling a turbofan gas turbine engine to an aircraft structure. Therefore, Udall et al.'s frame is not part of the engine casing and the integral attachment of the frame to both the fan casing 18 and inner casing 36 and does not teach the claimed integral engine casing because the frame 33 is attached to the engine after completion of the engine assembly process.

Therefore, the above-discussed prior art references neither individually nor in combination teach the present invention as recited in independent claims 1, 7 and 12. The remaining claims depend directly or indirectly from the respective base claims, and stand together therewith for patentability.

The Examiner has rejected claims 1, 2, 5-7, 11-13 and 15 under 35 U.S.C. 103(a) on the grounds of obviousness over Udall et al. (US 5,409,184) in view of Stuart (US 4,790,133), and has alleged that Udall et al. teach a casing shown in sections and "appearing" to be integrally joined together, thereby forming an integral casing. The Examiner has further alleged that Udall specifically teaches that the casing portions 18 and 14 are integrally joined by the frame.

For the reasons discussed in the previous paragraphs, neither Udall et al. nor Stuart teach the claimed invention. Thus, the Examiner's rejection of claims 1, 2, 5-7, 11-13 and 15 is traversed.

The Examiner has rejected claims 3, 4, 9, 10 and 14 under 35 U.S.C. 103(a) on the grounds of obviousness over either Udall et al. (US 5,409,184) in view of Stuart (US 4,790,133) or Stuart (US 4,790,133) in view of Davis et al. (US 3,720,060) or Springer (US 6,532,731), as applied above and further in view of Allen et al. (US 6,109,022).

Claims 3, 4, 9, 10 and 14 are patentable at least for the reasons above set forth with respect to independent Claims 1, 7 and 12.

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It is believed that this application is now condition for immediate allowance. Favourable reconsideration and early issuance of the Notice of Allowance are respectfully solicited.


Respectfully submitted,

Andreas ELEFThERIOU et al.

By:

October 5, 2005

Date



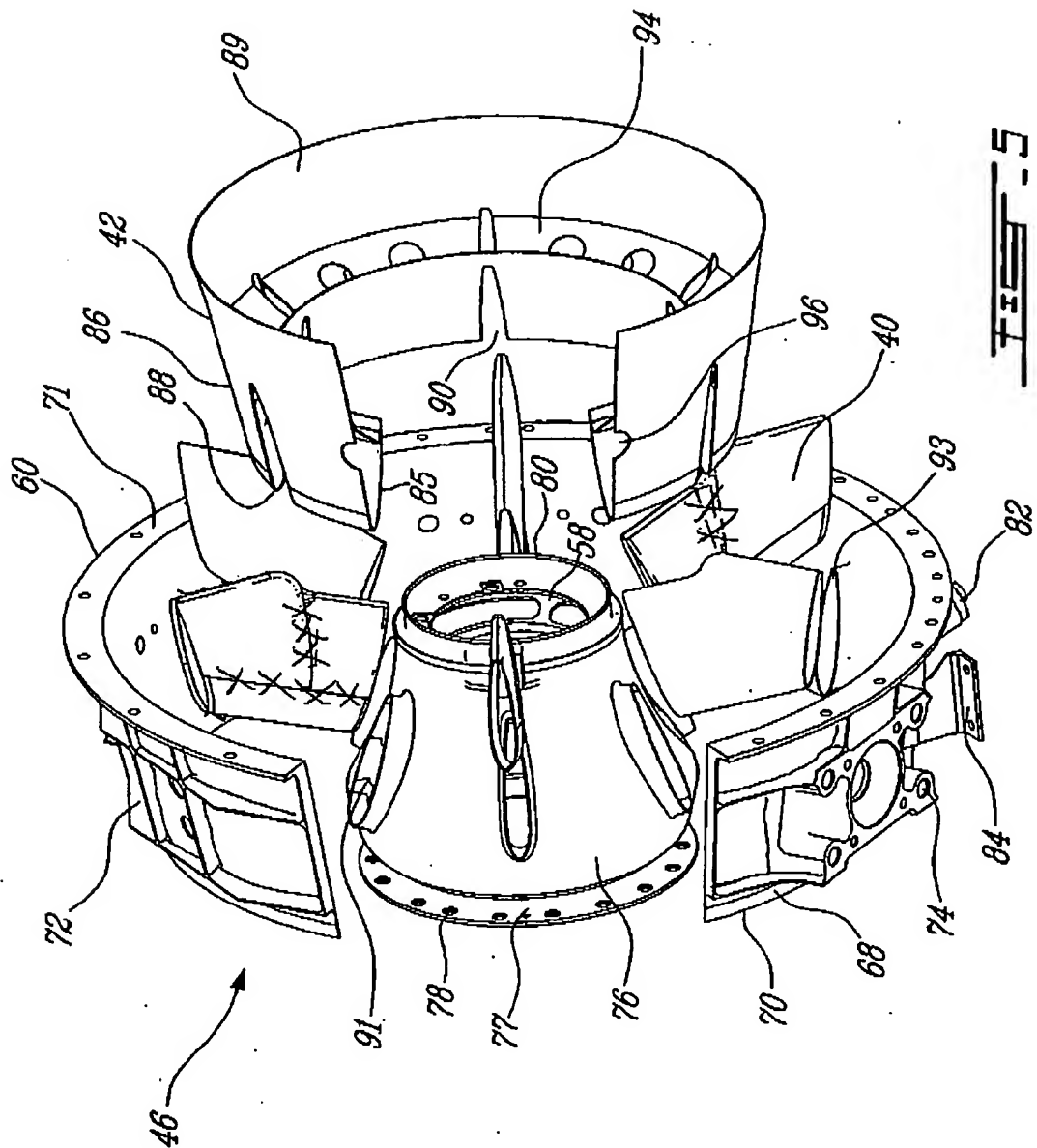
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Enclosure - Appendix A

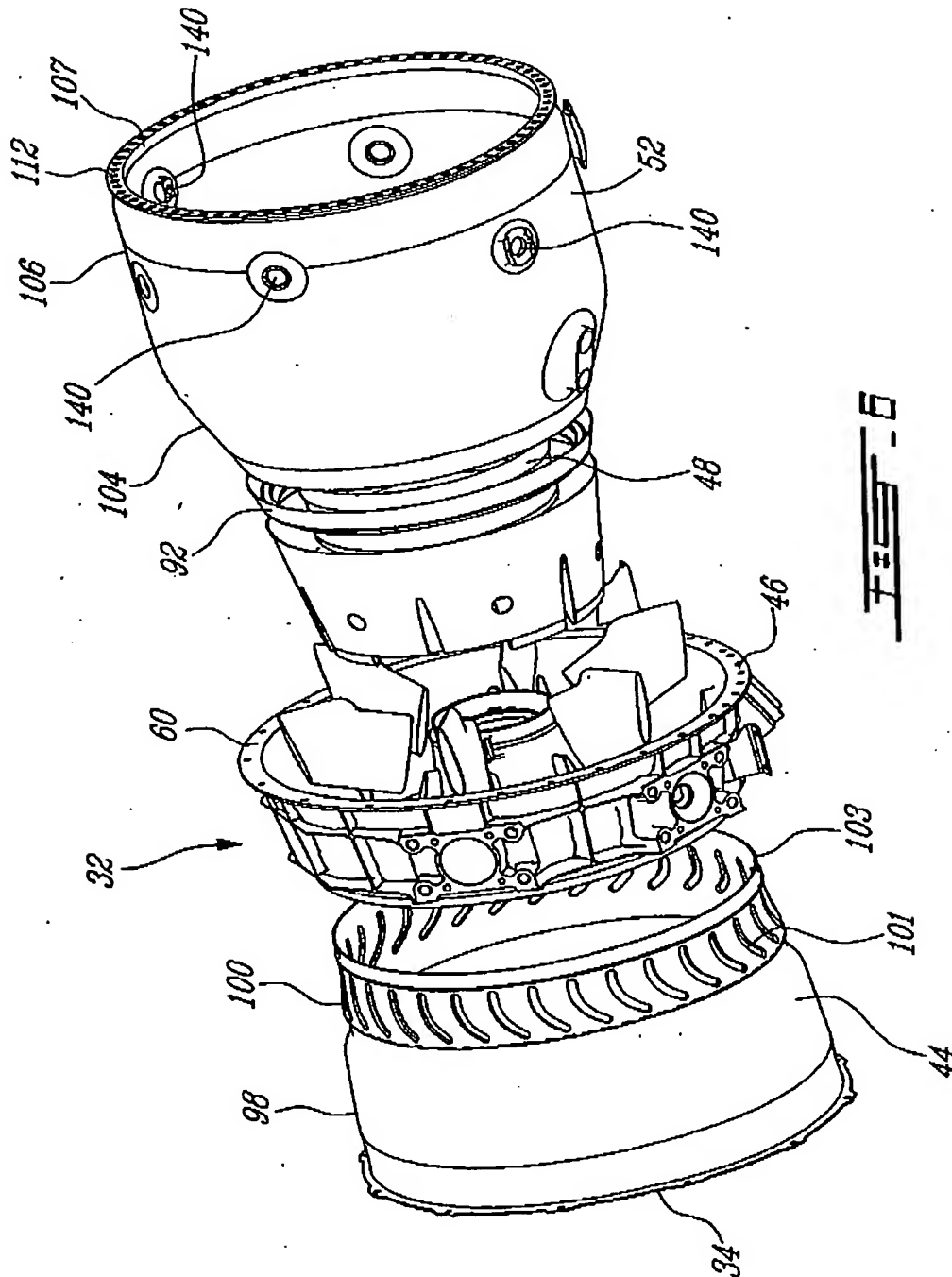
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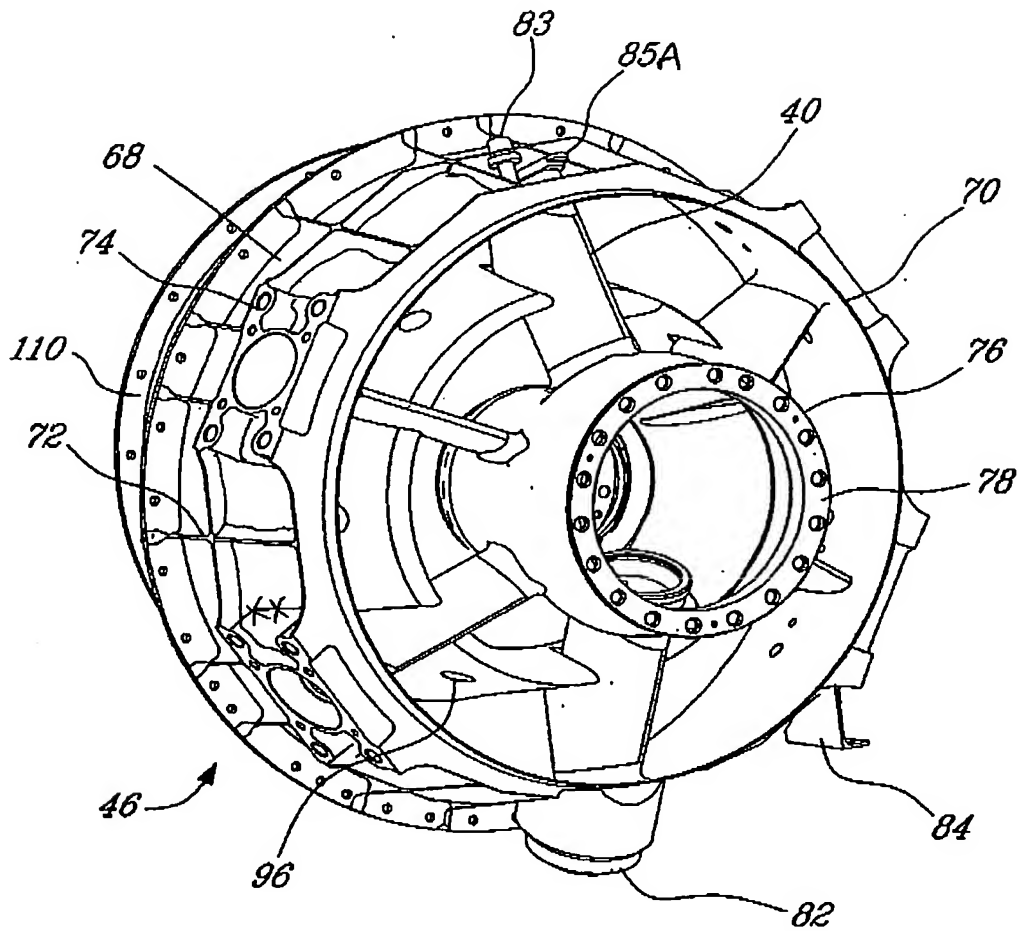
APPENDIX A

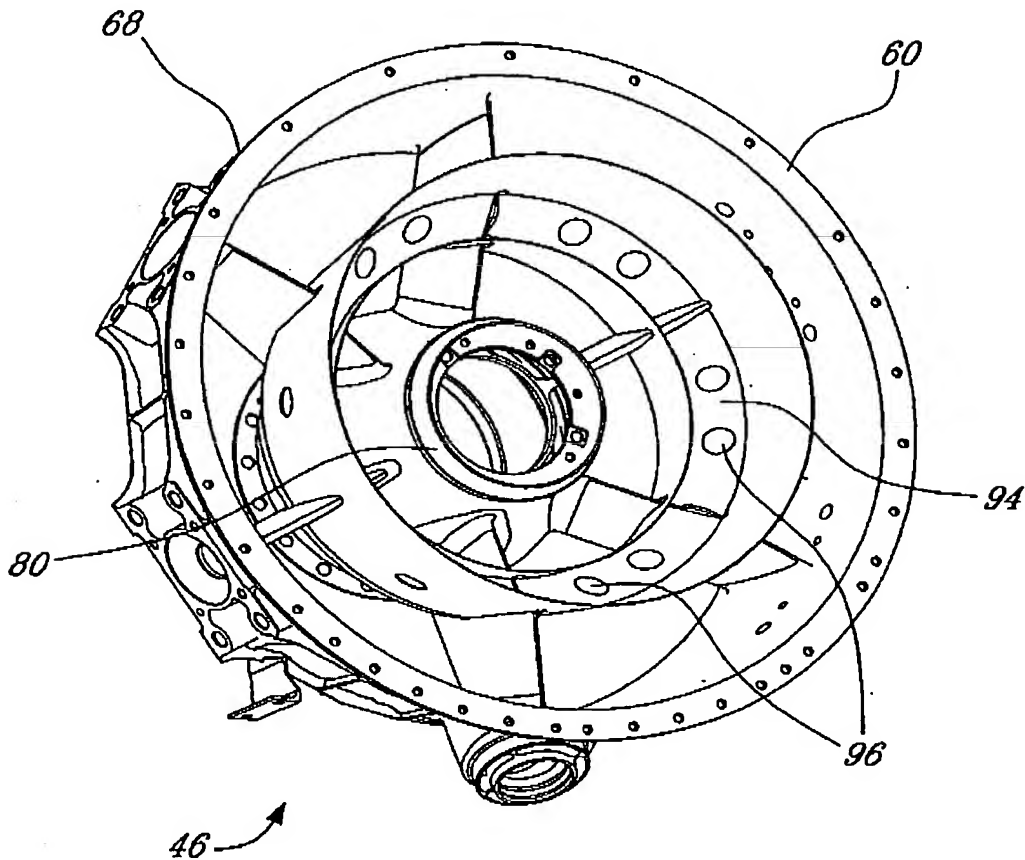
ANNOTATED SHEET



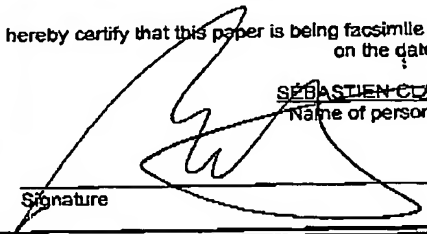
ANNOTATED SHEET



ANNOTATED SHEETFIG. 7

ANNOTATED SHEETFIG. 8

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 Signature	<u>October 5, 2005</u> Date